

Claims

1. (Presently Amended) A method of placing two, or more, effective filter/sieves or water blockage zones, at desired depths of penetration into a water producing oil/or gas reservoir such that oil and or gas production can be re-established, the method comprising:

a. injecting a first carrier fluid containing a reactive partitioning chemical R_1 into the well

b. injecting a spacer fluid into the well;

c. injecting a second carrier fluid containing a second reactive partitioning chemical R_2 into the well, wherein the second reactive partitioning chemical R_2 can be the same as the first reactive partitioning chemical R_1 , or a different reactive partitioning chemical, which will have a different partitioning coefficient value to the partitioning coefficient value of R_1 ,

d. injecting a second spacer fluid into the well;
and

e. injecting a gel or polymer progenitor fluid into the well, ~~wherein said reactive partitioning chemical is injected before or after said progenitor fluid.~~

2. (Original) The method of Claim 1 which further includes injecting a conditioning fluid prior to injecting said first fluid.

3. (Presently Amended) The method of Claim 1 wherein the partitioning reactive chemical(s) R_1 and R_2 are selected from the group consisting of ~~organic esters including~~ methyl formate acetate, ethyl formate, ~~ethyl acetate~~, propyl formate, methyl acetate, ethyl acetate, propyl acetate, methyl proprionate, ethyl proprionate, and propyl proprionate, and where R_1 and R_2 can be the same ester or a combination of different esters.

4. (Cancelled)

5. (Presently Amended) The method of Claim 1 wherein the wellbore ~~tubular volume~~ is filled with inert nitrogen gas, carbon dioxide gas, methane gas, condensate liquids, diesel liquids or crude oil liquids or mixtures thereof.

6. (Original) The method of Claim 1 wherein at least one, or more of the reactive chemical(s) or gel/polymer progenitor chemical (s) must have partition coefficient value(s) K_1 greater than zero, K_0 , with the other chemical(s) required for gel or polymer formation having partition coefficient(s) equal to zero, K_0 , or a partition coefficient value(s) greater than zero but less than K_1 .

7. (Original) The method of Claim 6 whereby partitioning

reactive chemical(s) and partitioning, or non-partitioning, gel/polymer progenitor chemicals are sequentially injected into the well in the order determined by their respective partition coefficient value.

8. (Presently Amended) A method of placing two, or more, effective filter/sieves or water blockage zones, at desired depths of penetration into a water producing oil or gas reservoir such that oil and /or gas can be re-established, the method comprising:

a. injecting a first carrier fluid containing a commingled mixture of reactive partitioning chemicals R_1 and R_2 wherein the partitioning reactive chemical(s) R_1 and R_2 are organic esters, into the well;

b. injecting a spacer fluid into the well; and

c. injecting a gel or polymer progenitor fluid into the well; ~~wherein said reactive partitioning chemicals are injected before or after said progenitor fluid.~~